

We claim:

1. A method of stabilizing the output signal of a system that detects microbiological growth in a sealed sample container that contains a sample which may contain an unknown microorganism, the method comprising the steps of:
  - (a) providing a sealed sample container which contains a fluid mixture of a culture broth, the sample, and at least one poisoning agent for stabilizing the background noise within a headspace above the fluid mixture in the sample container;
  - (b) monitoring pressure changes within the headspace of the sealed sample container; and
  - (c) indicating a presence of microbiological growth within the sealed sample container as a function of the change of the headspace pressure.
2. The method set forth in claim 1 wherein said step (a) comprises the step of providing a pair of coupled poisoning agents.
3. The method set forth in claim 2 wherein said pair of coupled poisoning agents are selected from the group consisting essentially of ferricyanide/ferrocyanide and ferrous/ferric.
4. The method set forth in claim 3 wherein said pair of coupled poisoning agents is ferricyanide/ferrocyanide.
5. The method set forth in claim 4 wherein the concentration of both components of ferricyanide/ferrocyanide is within the range of 0.00005M to 0.001M total concentration.

6. The method set forth in claim 5 wherein the ferricyanide/ferrocyanide ratio is between 1:4 to 4:1.

7. The method set forth in claim 2 including the step of providing a second poisoning agent which is a reversible oxidation-reduction indicator.

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8. The method set forth in claim 7 including the step of providing a second poisoning agent selected from the group consisting essentially of methylene blue, toluidine blue, azure I, and gallocyaninc.

12 9. The method set forth in claim 1 wherein the said step (a) comprises the step of adding at least two reagent mixtures.

10. The method set forth in claim 9 wherein the said step (a) includes the step of adding at least one reagent mixture of a growth supplement and a second reagent mixture of an antibiotic supplement.

18 11. The method set forth in claim 7 wherein the said step (a) comprises the step of adding at least two reagent mixtures.

12. The method set forth in claim 11 wherein the said step (a) includes the step of adding at least one reagent mixture of a growth supplement and a second reagent mixture of an antibiotic supplement.

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13. A method of stabilizing the output signal of a system that detects microbiological growth in a sample container that contains a sample which may contain an unknown microorganism, the method comprising the steps of:

(a) providing a sample container which contains a fluid mixture of a culture broth, the sample, and at least one poisoning agent for stabilizing the background noise in the sample container;

(b) monitoring the reduction of oxygen in the fluid mixture with a colorimetric or fluorimetric redox sensor; and

6 (c) indicating a presence of microbiological growth within the sample container as a function of the change of oxygen in the fluid mixture.

14. The method set forth in claim 13 wherein said step (a) comprises the step of providing a pair of coupled poisoning agents.

12 15. The method set forth in claim 14 wherein said pair of coupled poisoning agents are selected from the group consisting essentially of ferricyanide/ferrocyanide and ferrous/ferric.

16. The method set forth in claim 15 wherein said pair of coupled poisoning agents is ferricyanide/ferrocyanide.

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17. The method set forth in claim 16 wherein the concentration of both components of ferricyanide/ferrocyanide is within the range of 0.00005M to 0.001M total concentration.

18. The method set forth in claim 17 wherein the ferricyanide/ferrocyanide  
24 ratio is between 1:4 to 4:1.

19. The method set forth in claim 14 including the step of providing a second poisoning agent which is a reversible oxidation-reduction indicator.

20. The method set forth in claim 19 including the step of providing a second poisoning agent selected from the group consisting essentially of methylene blue, toluidine blue, azure I, and gallocyanine.

21. The method set forth in claim 13 wherein the said step (a) comprises  
6 the step of adding at least two reagent mixtures.

22. The method set forth in claim 21 wherein the said step (a) includes the step of adding at least one reagent mixture of a growth supplement and a second reagent mixture of an antibiotic supplement.

12 23. The method set forth in claim 19 wherein the said step (a) comprises the step of adding at least two reagent mixtures.

24. The method set forth in claim 23 wherein the said step (a) includes the step of adding at least one reagent mixture of a growth supplement and a second reagent mixture of an antibiotic supplement.

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25. A method of stabilizing the output signal of a system that is being monitoring a liquid mixture in a sealed container with a redox sensor, comprising the step of:

24 mixing at least one poisoning agent to the liquid mixture for stabilizing the base line pressure within a headspace above the fluid mixture in the sample container.

26. The method set forth in claim 25 wherein said step of mixing at least one poisoning agent comprises the step of mixing a pair of coupled poisoning agents.

27. The method set forth in claim 26 including the step of providing a second poisoning agent which is a reversible oxidation-reduction indicator.

28. The method set forth in claim 27 wherein said pair of coupled poisoning agents are selected from the group consisting of ferricyanide/ferrocyanide and ferrous/ferric.

29. The method set forth in claim 28 wherein said second poisoning agent is selected from the group consisting essentially of methylene blue, toluidine blue, azure I, and gallocyaninc.

30. The method set forth in claim 28 wherein said pair of coupled poisoning agents is ferricyanide/ferrocyanide.

31. The method set forth in claim 30 wherein the concentration of both components of ferricyanide/ferrocyanide is within the range of 0.00005M to 0.001M total concentration.

32. The method set forth in claim 31 wherein the ferricyanide/ferrocyanide ratio is between 1:4 to 4:1.